the attention of the State Society at the coming meeting in order that we may see if some means may not be devised for aiding the physicians of St. Helena and of Salinas in their fight against unjust imposition.

SCIENTIFIC WORK ON PLAGUE.

Since the establishment of the Plague Laboratory in San Francisco by the United States Public Health and Marine Hospital Service an enormous number of rodents have been examined and other routine duties performed. The officers attached to the Laboratory have also found time for original investigations which reflect great credit on themselves and their corps. This work is of much practical importance, and it should be a source of pride to the physicians of the State that a pestilence, which threatened to annihilate its citizens, should have been harnessed and turned to such excellent service. The JOURNAL has thought it would be of interest to give a resumé of the more important of these reports.

Wherry (Journal of Infectious Diseases, Vol. 5, No. 5, Dec. 18, 1908) exhaustively discusses the subject of plague among the ground squirrels of California. In this valuable paper we have the record of the first cases of natural plague infection among ground squirrels in America and a forecast of the danger that confronts the State and the Nation if prompt and vigorous measures are not taken to suppress the disease among these rodents.

McCoy and Wherry (Journal of Infectious Diseases, Vol. 6, No. 5, Nov. 26, 1909) record a case of plague that was traceable to ground squirrel infection with almost the certainty of a laboratory experiment. The diagnosis appears to have been established beyond the slightest doubt by very careful bacteriological examinations. Clinically the case was one of the rare and unusual type known as subacute plague. It is probably the first of this type to be reported in America.

McCoy (Journal of Infectious Diseases, Vol. 6, No. 5, Nov. 26, 1909) reports upon the bacteriology and pathology of the first extensive series of cases of plague to be recorded in the ground squirrel. The paper leads one to the conclusion that the majority of cases of the disease in these rodents are of the subacute or chronic type. With our present knowledge of the mode of transmission of plague from rodent to man, there would seem to be but comparatively little danger of infection of human beings from these chronic cases of ground squirrel plague.

McCoy (Journal of Infectious Diseases, Vol. 6, No. 2, April 1st, 1909) conducted an extensive series of experiments to determine the virulence of old and of recent cultures of the bacillus pestis. They are particularly interesting to Californians, because they show that the cultures, isolated during our recent epidemic among human beings and epizootic among rodents, are highly virulent. Perhaps the most surprising feature of the report is the high degree of virulence retained by certain old cultures of the plague bacilli that have long been grown on artificial media.

In another paper (Journal of Infectious Diseases, Vol. 6, No. 3, June 12, 1909) McCoy establishes the very interesting fact that a large percentage of the rats in San Francisco are quite immune to plague infection. The writer believes that the immunity is a natural one and not acquired by a previous infection.

In another communication in the same journal McCoy reports some interesting experiments upon the susceptibility to plague infection of ground squirrels, gophers and field mice. It was found that the field mice were just about as susceptible as the ordinary house-rat. The writer, however, concludes that as man rarely comes in contact with this rodent, the danger of infection would be small. The gopher appears to have a high degree of immunity. It would appear that a solution of this problem of the immunity of gophers might have an important bearing on the possibility of producing a successful immunity among other rodents. The ground squirrel on the other hand was found to be very susceptible to the disease.

McCoy and Mitzmain (Public Health Reports, Vol. 24; No. 8, Feb. 19, 1909) present an extensive series of investigations upon the biting of man by fleas from rats and squirrels. The results of the work tend in a general way to confirm the observation of the Indian Plague Commission, and are directly at variance with the reports of other investigators. They find that all rat fleas will bite man under experimental conditions and they confirm the prevalent suspicion that fleas from ground squirrels are not averse to making a meal upon human blood when the opportunity offers.

In another paper these workers (Parasitology, London, Vol. 2, No. 3, Sept. 30, 1909) have investigated the regional distribution of fleas on rodents, a subject which on first sight would seem of purely theoretical interest. However, when we remember that one of the important pieces of evidence of flea transmission recorded by the British Indian Plague Commission was the regional distribution of buboes in rats, the subject assumes a different aspect. McCoy and Mitzmain have found that in infected rodents in California the head and neck is not the area of the body most frequented by rat fleas and this they state is quite in accordance with the localization of buboes in these animals in California.

In the Monthly Bulletin of the California State Board of Health, for November, 1909, there appears a short article by Dr. McCoy upon the diagnosis of plague in man.

McCoy reports (Journal of Medical Research, Vol. XXI, No. 2, September, 1909) upon the extensive series of tumors found in rats in San Francisco. In view of the importance of the study of tumors in rodents in connection with the cancer researches that are being conducted in this and in other countries, it would seem unfortunate that there is no provision in San Francisco for utilizing the magnificent material bearing upon this subject available at the Federal Plague Laboratory.